

REMARKS/ARGUMENTS

In the Office Action, claims 1-6, 8-11, 14-15, 23-25, and 28 were rejected under 35 USC 103(a) as being unpatentable over Rowe US5260953 in view of Matsumoto US6295305, and claims 12-13 and 26-27 were objected to (with a note that they included allowable subject matter but depended from a rejected base claim). By the present response, the specification and claims 1 and 23 have been amended. Claims 1-6, 8-15, and 23-28 remain under consideration in this application. Applicant respectfully requests reconsideration for the reasons discussed below.

Paragraph 0013 and independent claims 1 and 23 have been amended to more explicitly recite what is shown in FIG. 2 – that the lambda configuration is a folded linear cavity lambda configuration. Applicant respectfully submits that the applied references do not teach, suggest, or disclose claim 1 or 23 recitations of (with emphasis added):

1. An apparatus, comprising: a tunable laser cavity, wherein said laser cavity comprises at least three mirrors, at least one filter and a plurality of crystals, wherein said at least three mirrors **are substantially arranged in a folded linear cavity lambda configuration**, said at least one filter comprises a birefringent filter and an etalon, at least one of said plurality of crystals comprises a Colquiriite crystal, and at least one of said plurality of crystals comprises a nonlinear crystal, wherein said at least three mirrors, said at least one filter, and said plurality of crystals are configured for providing electromagnetic radiation of an approximately single frequency; and ...

23. A tunable laser system, comprising: ... **at least three mirrors, substantially arranged in a folded linear cavity lambda configuration**; ..., said laser source, said one or more crystals, said at least three mirrors and said one or more filters being configured such that said laser source is capable of producing electromagnetic radiation within a particular wavelength range, at least one of said two or more crystals being configured to alter one or more properties of said electromagnetic radiation, and at least one of said one or more filters being configured to filter at least a portion of the electromagnetic radiation altered by said two or more crystals, wherein the portion filtered is adjustable to tune the frequency of the electromagnetic radiation altered by said two or more crystals.

Claims 1 and 23 recite a laser cavity with a substantially **folded linear cavity lambda configuration**. The substantially folded linear cavity Lambda configuration of the laser cavity results in a standing-wave cavity configuration with at least three mirrors as shown in FIG. 2. As can be seen in the embodiment illustrated in FIG. 2 and described in detail in paragraphs [0013] to [0017], the laser beam 136 emanating from the crystal 138 is incident upon mirror 134, which reflects the beam towards mirror 136. Upon being incident on mirror 136, the beam is reflected back along the same path towards mirror 134 and is subsequently reflected by mirror 134 towards the crystal 138 and mirror 132. This configuration of mirrors, along with other cavity elements, aids in establishing a standing wave in the laser cavity.

After closely considering the Examiner's arguments and the Rowe reference as a whole,

Applicant submits that Rowe does not teach or disclose the substantially folded linear cavity Lambda configuration taught by the Applicant. In contrast to the Applicant's invention, Rowe describes ring cavity configurations which are not folded cavity configurations. A ring cavity is a traveling wave cavity with cavity dynamics very different from the standing-wave embodiment provided by folded linear cavities. For example, in FIG.1 of Rowe, although the laser cavity is shown to include three mirrors 22, 24, and 26, the laser beam is sequentially reflected by these three mirrors as clearly indicated by the arrow marks along the beam line shown in FIG.1. Mirror 22 reflects the beam towards mirror 24, mirror 24 reflects the beam towards mirror 26, and mirror 26 reflects it towards mirror 22 to complete the ring cavity. The beam is always reflected forward along one direction and never reflected back along the same path of incidence. To further highlight the differences between the Applicant's cavity and Rowe's cavity, Rowe's cavity requires an element such as an optical isolator 20 to prevent bidirectional lasing and to provide stable lasing along one direction. This element is again not required in the Applicant's invention as the folded linear cavity is not a ring cavity.

Matsumoto does not overcome the above noted deficiencies of Rowe. Matsumoto was cited, with respect to claim 1, as relating to a Colquiriite crystal. Regardless whether Matsumoto describes such a crystal, however, Matsumoto does not appear to relate to a folded linear cavity lambda configuration. Thus, no combination of the applied references includes such a recitation.

In view of the above arguments, Applicant respectfully submits that claims 1 and 23 are patentable over Rowe in view of Matsumoto. Claims 2-6 and 8-15 depend from claim 1, and claims 24-28 depend from claim 23 and are therefore believed to be in condition for allowance at least by virtue of their dependency. Therefore, Applicant respectfully requests that claims 1-6, 8-15, and 23-28 be allowed.

In summary, Applicant submits that the remaining claims define allowable subject matter over the applied art and respectfully requests that a timely Notice of Allowance be issued in this case. Should the Examiner believe that anything further is needed to place the application in better condition for allowance, the Examiner is requested to contact Applicant's undersigned representative at the telephone number below.

Respectfully submitted,

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